REMARKS

This Amendment and Response are filed in reply to the Final Office Action dated June 28, 2004. In this Response, Applicants amend claims 1, 12-19, 21-23, 37 and 38 and traverse the Examiner's rejections of all pending claims 1-38. Support for the amendments can be found throughout the originally filed disclosure. Amendments to the claims are not an acquiescence to any of the rejections. Applicants' silence with regard to the Examiner's rejections of dependent claims constitutes a recognition by the Applicants that the rejections are moot based on the Amendment and/or Remarks relative to the independent claim from which the dependent claims depend. Furthermore, any amendments to the claims are being made solely to expedite prosecution of the instant application. Applicants reserve the option to further prosecute the same or similar claims in the instant or a subsequent application. Upon entry of the Amendment, claims 1-38 are pending in the present application.

The issues of the June 28, 2004 Office Action are presented below with reference to the Office Action.

<u>With regard to the Office Action, paragraphs 1 and 2</u>: The Examiner rejected Applicants' claims 1-38 under 35 U.S.C. 101 as being directed to non-statutory subject matter. The Examiner, in looking at the specification and drawing content, contends that "there is nothing but numerical tables and mathematical algorithm which draw the invention to theoretical issues." Applicants respectfully disagree with the Examiner, and traverse the Examiner's rejections.

Referring generally to the Examiner's contention, Applicants submit that the specification describes data classifiers, such as neural networks, that can detect patterns in data. Such data classifiers can be used in a wide variety of applications, including telecommunications account fraud, network intrusion, and/or fraudulent use of other systems and/or networks (Abstract). By correctly and quickly detecting fraudulent use, such data classifiers can result in significant savings in terminating or decreasing such use. Efficient pattern recognition by such data classifiers can minimize time wasted in maintaining and processing redundant information or in detecting noise in the data. Thus, the specification speaks to concrete and tangible data classifiers, neural networks and/or methods that provide useful, concrete and tangible results in avoiding fraudulent use of systems and/or networks, such as telecommunication systems. Thus,

Applicants submit that the Examiner's characterization of the specification as "nothing but numerical tables and mathematical algorithm which draw the invention to theoretical issues" is incorrect. The detection and elimination of fraud is a real and current problem, to which Applicants' methods and systems can be applied.

Applicants amend independent claims 1, 12, 15, 19 and 37 to more specifically recite the statutory subject matter therein. Dependent claims 13, 14, 16-18, 21, 22 and 38 are amended to conform to the independent claims from which they respectively depend. Claim 1 recites a processor-implemented method for *training a data classifier*, and claims 12, 15 and 19 recite computer-readable medium having instructions for respectively, *retraining a data classifier*, *operating a data classifier*, and *training a data classifier*. As known to those of skill in the art, proper training or retraining or a data classifier results in the data classifier operating more efficiently. By *forming* respective *difference measures* (claims 1 and 15), *conflict measures* (claim 12), or *redundancy measures* (claim 19), the methods recited in claims 1, 12, 15 and 19 can detect and resolve conflicting training data to avoid distortions in mapping between the input and output space, and/or prune training data sets to remove redundancy to provide more even coverage of the input space (page 3, line 21 through page 4, line 3 of the specification). Based on the measure formed, the methods can perform *adding the first and/or second vectors to the training set or discarding at least one of the vectors from the training set for the data classifier, and using one of the first and second vectors or the training set to retrain the data classifier.* Applicants submit that such claims directed to making a classifier, such as a neural network or system of processing elements, work more efficiently are sufficiently practical to be statutory subject matter. *In re Alappat*, 31 USPQ 2d 1545, 1558 (Fed. Cir. 1994); *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 47 USPQ 2d 1596, 1601-1602 (Fed. Cir. 1998).

Independent claim 23 recites a data classifier system including a *data classifier* and a *data processing subsystem operable to form a measure of difference*. The data classifier and data processing subsystem are specific processors, or computers, that operate so as to provide the useful and tangible result of efficient training or retraining of the data classifier. As described previously, the operations recited in claim 23 of *adding*, *using*, and/or *discarding* of at least one vector detects and resolves conflicting training data to avoid distortions in mapping between the input and output space, and/or prunes training data sets to remove redundancy to provide more

even coverage of the input space. As such, Applicants submit that the data classifier of claim 23 is statutory subject matter.

Applicants' independent claim 37 recites machine readable medium containing software, which is operable to, at least in part, *determine and association coefficient, form a measure of difference* and perform the *adding, using,* and/or *discarding* of at least one vector, as previously described. For the reasons given above, Applicants submit that claim 37 recites statutory material that provides a useful and tangible result.
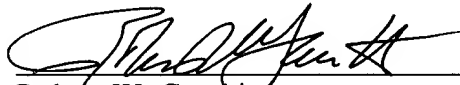
Because Applicants' traverse the Examiner's 35 U.S.C. 101 rejections to independent claims 1, 12, 15, 19, 22, and 37, Applicants thus traverse all of Examiner's 35 U.S.C. 101 rejections, and Applicants consider pending claims 1-38 to be allowable.

CONCLUSION

Applicants consider the Response herein to be fully responsive to the referenced Office Action. Based on the above Remarks, it is respectfully submitted that this application is in condition for allowance. Accordingly, allowance is requested. If there are any remaining issues or the Examiner believes that a telephone conversation with Applicants' attorney would be helpful in expediting the prosecution of this application, the Examiner is invited to call the undersigned at 617-832-1241.

Respectfully submitted,

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